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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HARCOURT, BRAD

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,274	Applicant(s) REID, MICHAEL A.	
	Examiner Brad Harcourt	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7-11, 21, 23-25 and 27 is/are rejected.
- 7) ☒ Claim(s) 3-6 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 9-11, 21, 23 and 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Carmichael et al. (US Patent No. 6,220,357).

In reference to claim 1, Carmichael discloses a plug 30 for controlling fluid flow in a well bore at a packer or other sealing element (col. 6, line 67), the plug 30 comprising a substantially cylindrical body 6 adapted for connection to a threaded wellbore element, the body 6 including a bore (not numbered, see Figs. 22 and 23) through a portion thereof thereby creating a barrier and providing isolation from production zones (through port 3B, as shown in Figs. 22 and 28), where in the body 6 comprises a plurality of radial ports 3B for passage of fluid from the bore to an outer surface 5 of the body 6, an actuating member 7 moveable relative to the body 6 so as to cover each of the plurality of ports 3B in a first position and uncover each of the plurality of radial ports 3B in a second position wherein movement of the actuating member is controlled by an actuating mechanism 32, the mechanism 32 being operable under pressure in the well bore to set the plug in a first natural state (Figs. 19-21) wherein the actuating member 7 is in the first position for a pressure under a predetermined pressure range;

a second closed state (Figs. 28-30) wherein the actuating member 7 is locked in the first position regardless of the pressure being greater or less than the predetermined pressure range or within the predetermined pressure range following an initial increase in pressure greater than the predetermined pressure range or the pressure being within the predetermined pressure range for a period of time less than a predetermined time;

and a third open state (Figs. 25-27) wherein the actuating member 7 is moved to the second position on increasing the pressure to the predetermined pressure range and holding the pressure in the range for a predetermined time.

In reference to claim 2, the actuating mechanism 32 is a channel in actuating member 7, which is a piston.

In reference to claim 9, actuating member 7 is a sleeve.

In reference to claim 10, sleeve 7 is engaged by locking key 22.

In reference to claim 11, the predetermined range to actuate the tool is any pressure above 1500 psi (col. 4, line 55).

In reference to claim 21, Carmichael discloses a method of controlling fluid flow in a well bore through a plug 30 operated by an actuating mechanism 32, the method comprising the steps of:

providing a plug 30 comprising a substantially cylindrical body 6 adapted for connection to any conventional threaded wellbore element, the body 6 including a bore (not numbered, see Figs. 22 and 23) through a portion thereof thereby creating a barrier and providing isolation from production zones (by closing off port 3B and isolating a

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zone outside the screen 5), wherein the body comprises a plurality of radial ports 3B for passage of fluid from the bore to an outer surface 5 of the body 6,

providing an actuating member 7 movable relative to the body 6 so as to cover each of the plurality of radial ports 3B in a first position (Fig. 22) and uncover each of the plurality of ports in a second position (Fig. 25);

providing an actuating mechanism 22 adapted to move the actuating member 7; increasing pressure from a surface of the well bore to within a predetermined range (high enough to cause shear member 1 to fail); and

holding the pressure within the predetermined range over sufficient time to cause the actuating mechanism 22 to move the actuating member 7 from the first position (Fig. 19) to the second position (Fig. 25) to uncover each of the plurality of radial ports 3B.

In reference to claim 23, a predetermined range of above 1500 psi (col. 4, line 55) is required to actuate the tool.

In reference to claim 24, actuating member 7 is locked in the first position (Fig. 28) after the predetermined pressure actuates the plug 30 to the second position (Fig. 25) and then pressurized again to lock the tool in the locked first position (see Fig. 30 for locking detail).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 8 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al. (US Patent No. 6,220,357) in view of Henderson (US 6,978,840).

Carmichael discloses all of the limitations of claim 7 with the exception of a pressure sensor located in the bore, a processor to control a motor in response to the pressure, and wherein the motor causes relative movement between the actuating member and the body. Henderson discloses plug adjacent to packers or other sealing elements 60 comprising a cylindrical body 80 with an actuating member 110 that moves relative to body 80 to cover or uncover ports in body 80. Pressure sensors 150 relay a pressure measurement to a processor 152 which causes an electrical actuating mechanism 125 to move actuating member 110 relative to body 80. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use an electric actuator and a pressure sensor to move an actuating member on the system of Carmichael in view of Henderson so that the apparatus can be actuated by a pressure condition measured in the wellbore rather than a pressure exerted from the surface.

In reference to claims 8 and 27, actuator 8 is a sleeve and it is engaged by key 22 that secures it in either the first or second position.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al. (US Patent No. 6,220,357).

Carmichael does not disclose pressure testing above the plug. However, the examiner takes Official Notice that performing a pressure test in a wellbore is well

known in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to perform a pressure test in the operation of Carmichael so that an operator can ensure all parts of the apparatus are functioning properly.

Allowable Subject Matter

Claims 3-6 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant argues that the rejection to claim 1 should be withdrawn as Carmichael fails to disclose creating a barrier and providing isolation from production zones. Carmichael discloses using a piston 7 to close off a plurality of ports 3B so that the central bore is isolated from a production zone adjacent to the screen 5.

Applicant also argues that the rejection should be withdrawn as Carmichael fails to disclose the second closed state as recited in claim 1. More specifically, Applicant argues that the tool disclosed by Carmichael is operated by increasing pressure which results in a bleed off of the pressure which opens the ports. Applicant states that claim 1, as now amended, remains closed from bleed off situations.

Claim 1 recites that the second closed state as “a second closed state wherein the actuating member is locked in the first position regardless of the pressure being

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greater or less than the predetermined pressure range or within the predetermined pressure range following an initial increase in pressure greater than the predetermined pressure range or the pressure being within the predetermined pressure range for a period of time less than a predetermined time". The examiner is interpreting that limitation so that, in the second closed state, no amount of pressure applied for any amount of time will open plug or shift the plug out of its first position (as recited earlier in the claim). However, Carmichael discloses a second closed state in Figs. 28-30 and col. 5, lines 59-65 in which the plug is "locked and closed" (col. 5, line 65). Once in this state, no amount of increasing the pressure for any period of time will shift the plug out of its closed state. Notice how in Figs. 21, 24, 27 and 30, the pin 22 moves through the non-continuous j-slot 32. Once the pin has reached the position of Fig. 30, movement of the pin 22 is restricted to the far right portion of the slot 32 and thus the piston 7 is restricted from moving back into the open position shown in Fig. 25 regardless of pressure increases.

Applicant's amendments and arguments relating to claim 21 are directed to substantially the same issues addressed above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Harcourt whose telephone number is (571)272-7303. The examiner can normally be reached on Monday through Friday from 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shane Bomar can be reached on 571-272-7026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/
Primary Examiner, Art Unit 3676

BH
4/12/11